THE HEALTH EDUCATION JOURNAL

113 Editorial

115 The Changing Philosophy of Health — F. A. E. Crew

122 Museum Exhibitions and Health Education — H. Daifuku

128 Health Education and Sanitation — Mayhew Derryberry

138 Health Education in Industry—A Case History — Olga Maček

145 Refresher—The Problem of Pain in Childbirth — Grantly Dick Read

149 International Report : Health Education in Community Development — Leo L. Bariό

160 Reviews

VOLUME XIII MAY 1955 NUMBER 2

The Central Council for Health Education

THE HEALTH EDUCATION JOURNAL

Editor:
DR. JOHN BURTON

Assistant Editor:
M. A. TAYLOR

Published by

THE CENTRAL COUNCIL FOR HEALTH EDUCATION

TAVISTOCK HOUSE, TAVISTOCK SQUARE,

LONDON, W.C.1.

Founded 1927 *Incorporated* 1936

The Central Council for Health Education accepts no responsibility for the views expressed by contributors to The Health Education Journal. *The material is copyright, and enquiries regarding reproduction from this issue, whether in whole or in part (except for quotation), should be addressed to the Editor or to Educational Clearing House, Unesco, Paris.*

From 1955 onwards, the HEALTH EDUCATION JOURNAL and the HEALTH INFORMATION DIGEST are being published at two-monthly intervals. During the year two issues of the Health Information Digest will appear, in January and July, and four issues of the Health Education Journal, in March, May, September and November. The subscription for the six issues is 15s. a year, post free.

Editorial

THE HEALTH EDUCATION OFFICER

READING *The Functions of the Medical Officer of Health**, one is impressed by the rich variety of interesting opportunities open to him, but perhaps the most exciting paragraph appears on the last page and begins with these challenging words: "To acquire an accurate knowledge of the influences, social, environmental and industrial . . . in his area . . ."

In the past these words have usually been taken to refer to physical factors alone, but to-day the emotional climate in an industry and the beliefs and prejudices of the social group are recognised as being equally important environmental influences on the health of the people.

Apart from a handful of pioneer studies, few data exist to guide the medical officer in this field, and in the technically advanced countries, particularly, what we might term the anthropology of health has been seriously neglected. As a result, expensive services are provided and as often as not abused or only partially used.

In most fields of his work the acquisition of the "accurate knowledge" is built up by statistical returns and the reports of skilled officers. In the delicate field of motivation, opinion and behaviour there are no returns, and reliance must be placed on the personal impressions of individuals. At best these are penetrating generalisations from their own special experience; at worst, wild guesses conditioned by personal prejudices. On the executive side the moulding of this subtle thing called public opinion is also carried out with little planning or material support. The opportunities for experiment and achievement are as great here as they were a hundred years ago in other fields. It is this situation which has called into being the still somewhat ill-defined appointment of Health Education Officer.

With the first year's course for the Diploma in Health Education nearly completed, it is pertinent to ask what Medical Officers of Health expect of a Health Education Officer. Is it someone who will design posters and arrange film shows, or is it a close colleague of the M.O.H. who will be consulted at every stage in the investigation, planning and execution of any public health project? Will he be someone who is told to lay on 20 meetings,

*Society of Medical Officers of Health, Tavistock House, Tavistock Square, London, W.C.1. Price 1s. 6d.

or someone who is given a health project to study and asked to report on its educational implications? It has been the aim in establishing a university diploma in health education to qualify experienced health and education workers to handle, in co-operation with the medical or education officer, the full range of these new responsibilities in addition to the traditional work. It is at this point that one has seriously to consider the skills which a health education officer should possess and those which he may or may not command.

Perhaps the most important qualification of the Health Education Officer would be his ability to make easy and fruitful contacts with members of the public and other officers of the authority, for on this will depend his capacity to gain knowledge of the needs and the climate of opinion in the area, to find out the people of influence and to gain their co-operation in health projects.

He needs to be able to examine critically any health project contemplated by the authority and report on those aspects in which education of the public is an essential factor and suggest ways in which it can be done. He requires to have a good knowledge of the methods and media of health education and to be able to train members of staff in their application. He may or may not be able to produce first-class original designs and material, as this is a special ability, but he should be able to judge the work of others. He should be in a position to evaluate the health education programmes at each stage: preparation, execution and final results.

If he can meet these requirements there will be little doubt about his usefulness. But it would seem that he should be an independent officer, with direct access to his chief.

THE CHANGING PHILOSOPHY OF HEALTH*

By F. A. E. CREW, M.D., B.Sc., Ph.D., F.R.S., F.R.C.P.Ed.,
Professor of Public Health and Social Medicine, Usher Institute,
University of Edinburgh

Man invented that aggregate form of living which we know as a human society in order, presumably, to facilitate his dominion over a hostile environment and to make easier the satisfaction of certain fundamental human needs. He is a gregarious animal and it may be assumed that he found by experience that living in aggregates made the production of food and shelter more certain, gave greater protection, satisfied his yearnings for companionship and secured the continuance of his kind. The early forms of human society certainly seem to have conferred much advantage upon their individual members. Their kinship relationships and their rituals did much to shift the load of emotional difficulty from the individual on to the broader back of the group as a whole. It would seem that man's elaboration of this social organisation from the primitive to the modern has produced an external social world that at many points is violently in disharmony with human needs and also that the speed of this societal evolution has exceeded man's ability to adjust.

To great numbers of purposeless, bewildered and perplexed individuals in our society, since adjustment is beyond their unaided ability, the conditions that exist are intolerable, and in their attempts to escape from the uncongenial there would seem for them to be but one easy and respectable route, that of vague ill-defined and symbolic illness. Such illness is a common excuse for masochistic sloth and a sanction for the inefficient. Much sickness is nothing more or less than dramatised discontent born of disharmony, and the profession of medicine, therefore, by restricting its activities to dealing with the symptoms rather than with the cause, is largely employed in perpetuating the conditions that are primarily responsible for such sickness. Indeed with the world as it now is nothing could be more calamitous than to rob the people of this kind of sickness, for as things are there is no escape from perplexity and uncongeniality for thousands

* From an address to the C.C.H.E. Summer School, August, 1954. See also *Health Education Journal*, Vol. XII, No. 4, October, 1954.

amongst us other than through the narrow neck of the bottle of medicine. To a large extent the social function of medicine has thus unfortunately become the provision of excuses for the inefficient and of sanctions for those who, because of their own inadequacies, cannot cope with circumstances.

In very general terms it can be concluded that the conquest of the infectious diseases, of the diseases that formerly decimated the young and of the diseases of privation, is fairly complete and that, as a consequence of this, certain diseases formerly relatively infrequent in their incidence have come to assume a considerable prominence. The diseases of plenty have come to be more common, and the chronic diseases of the mature and senescent—genetic, metabolic, degenerative and malignant—have now become so common as to command the attention not only of the medical profession but of society as a whole. Furthermore, and again in very general terms, it can be concluded that the diseases which have passed or are passing rapidly under control are those in which the causal agencies have their existence in the external *physical* world of the community, whilst the diseases that have now come to figure so prominently among the causes of chronic disability and death are those in the causation of which a variety of factors operate—some genetic, some which relate to personal habits and others which exist in the external *social* world of the community.

The different income groups within the population and different regions within the country are to be distinguished by significant differences in respect of the incidence of a variety of illnesses. Many of these are undoubtedly true reflections of differences in the conditions and circumstances of their environments and occupations. Though the benefits of medical care have latterly been made available to all, not all of those to whom they are available are in a position to profit therefrom. The different social categories are not so much to be distinguished nowadays by differences of income, as they were in former times, as by differences in their modes of spending the money that is earned. It can be spent in ways that are conducive to the maintenance and augmentation of health or otherwise, and much depends upon the attitude toward health and to the desirability of securing it that prevails in the different groups. And even though the desire for healthiness were equal throughout society, the chances of securing it are by no means equally distributed. Thousands of the population are still imprisoned in the hideous squalor of the legacy that was left to us by the nineteenth century. Others are bound by the shackles of ignorance and superstition. Such imprisonment, such bondage, are not compatible with the maintenance of health, and under such circumstances there is very little that purely medical therapy can do.

Society for its continuance requires that a vast variety of tasks shall be undertaken. Some kinds take the form of strenuous physical labour, others are sedentary ; some are in the open air, others in the vitiated atmosphere of office and factory ; some are creative and emotionally and intellectually satisfying, others are dull routine drudgery. Very many of these occupational categories have their own peculiar health hazards, some being positively dangerous. In general terms the amount of minor illness occurring amongst those undertaking a particular kind of work is an index not only of the danger to health but also of the uncongeniality of the work that is demanded. It is small amongst those who are doing work that is satisfying to them and which is regarded as important by others ; it is considerable amongst those who are called upon to perform work from which they derive no contentment. Here again purely medical therapy is largely impotent and only social therapy can hope to eradicate the causes of such sickness.

In the establishment of that micro-environment which is the home, if this is to be health promoting in respect of its general conditions and atmosphere, the family grouping can claim an exceptional importance. Evidence that has been accumulated shows beyond all doubt that the interrelationships between the individuals constituting the family play a most important role in determining the state of the mental health of the component individuals. Yet the kind of society that we have developed so far has imperilled the very continued existence of the family group and has made the achievement of a harmonious interrelationship among its members difficult of achievement.

Though these developments undoubtedly have their repercussions in the medical field, medicine itself has no therapy which can be applied to the resolution of the problems they create. It would seem indeed that the great and urgent need of the day is that the encouragement thus far given by society to the medical scientist shall be given with the same readiness and in the same magnitude to other social scientists, also, from whose studies it can be expected that there may emerge knowledge that could be transformed into the power to repair the present disease evoking qualities of society and its institutions.

This is of importance, also, because of the complexity and social importance of the problem of the progressive increase of the proportion of the aged within the population that has resulted very largely indeed from the success of medicine in giving to society the power of controlling the disease-evoking agencies resident in the external physical world. The proportion of the aged has risen because the birth rate has fallen and because the survival rate, especially amongst the younger age groups, has risen. Though the net reproduction rate of the population has fallen,

of those that are born fewer now die in infancy, childhood and early maturity and so live on to die in late maturity and old age. Since the reproduction rate has fallen to half of what it was a century ago, it follows that there are now relatively far fewer young in the population than there used to be and relatively more old, and so the mean age of the population has steadily risen, and indeed is still rising. At present the life expectancy amongst those aged sixty-five and over is not significantly greater than it was a hundred years ago ; but should the ardent quest for the power to control the cardio-vascular and malignant diseases be successful, then the life expectancy of the individual would at once leap to become far greater than it now is.

Since in the great majority of instances death at present amongst the old is not the gentle end of a long and progressive waning but is a last phase in the progress of some particular disease, it follows that in increasing measure the patients of the physician will be those in the older age groups of the population and that the commonest of the most serious diseases with which he must attempt to deal will be the malignant and the cardio-vascular diseases, chronic in their course and disabling in their effects.

That branch of medicine which is now becoming known as geriatrics will assume an importance both in medical education and in practice equal to that of paediatrics in the early decades of the present century. But sickness in old age differs from sickness in youth or maturity in that, since in a large number of instances the old either live alone or inconveniently with relatives or others, the attention, domestic and nursing, that it requires is not readily available. The social aspects of such disease are more important than are the purely medical and they demand social as well as medical therapy.

As things are in our society the economic burden constituted by those of pensionable age and over within the population is already heavy and must grow heavier still if the present trends continue. It is society's will, in accordance with the prevailing social ethic, that life shall be preserved and prolonged ; the ethic of medicine binds the physician to the same obligation. In the medical sciences the quest for the knowledge that will give power to control the degenerative and malignant diseases eagerly proceeds ; yet in the social structure as we know it there is no place for the old, and much illness amongst them would seem to derive from a sense of sudden extrusion from the community. Disease of this kind is the reaction of the total personality to the harmful circumstances to which the individual is suddenly exposed. Feeling unwanted, many amongst the old do not exercise their skills and so atrophy.

Since it is not improbable that the life expectancy of the

individual will become further, and perhaps greatly, extended, it behoves society to ensure that the problems thus created do not lead to crisis and catastrophe. The life span being thus extended and healthiness being assured to the senescent, the relation between the chronological and the physiological age of the individual will need to be reviewed. Manifestly the school leaving age and the age on retiral in a population in which the life expectancy is seventy-five years could be much higher than in one with a life expectancy of forty-five years. But there will be much need for knowledge on which education in the art of growing old can be based, for senescence guidance clinics, for the development of a system whereby the process of withdrawal as the power of adjustment and adaptation wanes is as gradual as the process of entrance into society by the infant. Medicine as a social science must be heavily involved in these matters, but its role must remain a subordinate one to that of the statesman whose policies are shaped by advancing knowledge in all those scientific disciplines which deal, directly or indirectly, with those features of a human society which affect the public health.

Medical intervention of the same kind has created even more acute and serious problems in other and relatively undeveloped countries. During the period of the phase of colonisation in which we as a people indulged, we introduced into many parts of the world the medicine that is part of our own culture, using it very largely with benevolent intent to improve the lot of the indigenous peoples whose cultures differed markedly from our own. We inserted nineteenth- and twentieth-century Western European scientific medicine into the cultures of peoples who, according to our own standards, were still living in the equivalent of our own Middle Ages. By doing so we have largely helped to destroy these cultures and have created problems of far greater complexity than those which we attempted to solve.

In India, for example, the population has been increasing at the rate of four and a half millions every year, and that it is largely the result of the introduction during the period of British rule of our standards of sanitation and medical care is beyond doubt. India is at present quite incapable of feeding from her own resources her immense and rapidly growing population and so, quite inevitably, much poverty and even more misery is the lot of millions. The major task facing the Indian statesman is that of finding solutions to the social and economic problems thus largely created by medical intervention.

In Africa the introduction of modern European medicine for the benevolent purposes of saving life and of eradicating disease from the indigenous populations has been largely and directly responsible for the magnification of a cluster of problems that relate to the interrelationships of the different ethnic groups.

In South Africa the policy which the medical services there have pursued seemingly has been in discord with the policies of the presently predominant political party.

In many parts of the Empire it has been shown that the effects of medical intervention far outpace those of the other services which are directed towards social amelioration, and in so doing create problems that threaten to bring all such betterment to an end. The eradication of many and prevalent diseases responsible for much death, disability and inefficiency—malaria, venereal diseases, yellow fever and the like—has become a relatively simple matter, but their elimination can result in a complete disruption of the prevailing economic system so that famine can threaten to become the regulator of population growth.

Perhaps the lesson that is to be learnt is that medicine is but one of many activities that are directed to human and social amelioration ; that medicine can bring under control the environmental factors causing the major diseases of a native people far more speedily than the other services can create the conditions that are necessary if those thus saved and made healthy are to flourish, and that possibly in all projects for social amelioration of this kind what is needed is a timetable of intervention so that the medical services are not unleashed too soon.

Thus, both in this country and overseas, medical action has given rise to repercussions that take the form of grave and serious social problems, problems unlike those which medicine has so far solved in that to them certain ethical values are attached. With the growing disparity between the supporting and the supported categories within a population, and with the increasing disparity between the number of mouths to be fed and the available food resources of the world, the problem of the *bouche inutile* gains in importance. In this country within the National Health Service it is already being found that the existing facilities cannot cope with newly discovered and enlarging needs. The changing age structure and the changing pattern of morbidity are prominent among the factors that are creating the demand for the expansion of medical and hospital services at a time when the financial resources of the nation are strained.

It is to be remembered that in their beginning the medical services were encouraged because it was thought that such medical intervention would prove itself to be a sound business proposition. It would certainly seem that the reasons for the encouragement of medical research and of the practice of preventive and of curative medicine have changed, though not completely, since then. It would be difficult to maintain that the medical care of the old, permanently disabled by chronic illness, or of the idiot and imbecile beyond all human aid, is economically desirable. Such matters are not to be considered in economic terms, for

moral principles are involved. They do not create difficulties within the medical profession, for this is governed by an explicitly stated code ; but they do constitute problems of profound difficulty and complexity for society as a whole. There is to be discerned the growing interest in such matters as the sterilisation of the unfit and euthanasia which can be regarded as an indication that the gravity of the problem is becoming recognised and that the search for a possible solution has begun. I refer to this matter only to attract your attention to the possibility that in the future the social ethic may come to be in conflict with the ethic that at the moment prevails within the profession of medicine.

The medical ethic in its origin and development was associated with the development of the profession of medicine as a body concerned with the diseases of individuals. It regulates the relationship of physician and patient, often as intimate a relationship as that of the confessional. Like the Church, the medical profession would seem to claim that it is concerned with matters outwith the province of the State, that its obligations are to the individuals that seek its aid and that it is not in any way concerned with the social consequences of its benevolence. Concerning many matters to which social considerations are attached—contraception, sterilisation, euthanasia, divorce, for example—there is no purely medical opinion but merely the conflicting views of men and women whose interpretation of their knowledge and experience is directed by their sincerely held religious beliefs, so that the opinions expressed derive their strength not from science but from faith.

Yet it is with such matters that those who serve in the field of preventive medicine, who are concerned not with the diseases of individuals but with the health of the nation, are becoming increasingly involved. It is necessary to cultivate an opinion concerning them, to answer the simple question, will this or that proposition contribute significantly to the further augmentation of the health of the people. Since ethical considerations are heavily involved such medical opinion alone could not form the basis of policy, but it would be the social ethic and not the ethic of clinical medicine that would prevail.

Thus it may be that in the future the ethic of clinical medicine and of preventive medicine respectively may come to differ, to make even greater the divergence between these two main branches of medicine that has already developed. This is indeed likely, for the quest for personal salvation is rapidly giving place to the pursuit of social amelioration and health for the group.

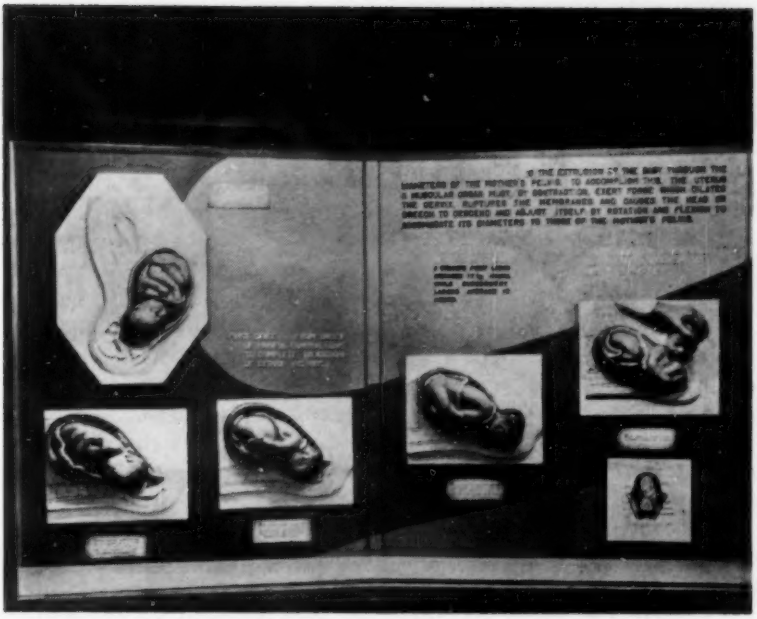
MUSEUM EXHIBITIONS AND HEALTH EDUCATION

By H. DAIFUKU,
United Nations Educational, Scientific and Cultural Organisation

THE word "museum" inevitably evokes a mental vision of a musty old building in which are found narrow, dimly lit dusty cases filled with a miscellaneous group of objects donated from cluttered attics. Such museums may not be without interest, for theirs is the attraction of visiting an old book store or "junk" shop in which from time to time an interesting object may be discovered and, on rare occasions, something valuable. Museums of this nature continue to exist, but this stereotype is becoming much more rare in recent years as museum programmes in countries throughout the world are being altered to fit the demands and the needs of contemporary society. Displays can be interesting and attractive and a great deal has been gained by museums from lessons learned from designers, industrial artists, and visual aid specialists.

Before going further, it would be valuable to consider some of the differences between displays conceived by museums and those done by other visual education specialists. Museums are varied in type and function. They range from art museums like the Louvre or the Metropolitan, through museums of science, industry, and the small local museum. Of these the science museums would be the general type from which exhibitions related to the subject of health education can be found. There also exist, in smaller numbers, the more highly specialised health museums which are concerned exclusively with the problem of health education.

In their early history of development, natural history museums were concerned with the collecting of specimens, their classification, and the study of organisms both living and extinct. They were primarily interested in research and some of the research was of direct economic value, e.g., the study of parasitic organisms, their life cycle, methods of control, etc. This was the period in which a given case would be filled with rows of a particular species of bird so that slight variations could be seen, or in another room there may be placed rows of birds' nests to show different types built by different species.



The activities of museums as research institutions still continue. To-day, however, a much higher proportion of staff time tends to be given over to the preparation of exhibitions and in general educative work. It is not a matter which can be assessed easily, but the individuals on a museum staff concerned with planning an exhibition happen to be specialists in such fields as ornithology, human biology, mammalogy or parasitology first, and to be concerned with exhibitions as part of their secondary staff duties.

This underlying difference is reflected in the type of exhibit prepared. There is an increasing overlap between museum displays and other visual aids. Automatic slide- and movie-projectors, sound effects, charts, photographs and diagrams are being used with increasing frequency. On the staff there may be artists who work under the direction of the specialists and translate their ideas into an attractive form, but the difference persists. This is to be seen in the type of exhibits which are made for museums . . . they are generally planned to be used over a period of years and a given exhibit usually represents a considerable outlay in terms of staff time and expense.

Temporary exhibitions as well as travelling exhibitions are also made by museums. Again, there is a tendency for such exhibitions to differ from those made by other visual aid specialists. Two-dimensional material (the use of photographs has become

increasingly prominent) is used, but the primary focus of a museum exhibit is a three-dimensional object, an actual specimen, a replica or a scale model of the object. This is based on the experience of museums that while people do learn more quickly by seeing things, there is greater interest shown in examining a "real" object than in looking at a photograph of it.

Models may require considerable expenditure in time and money. A recent example which can be cited is the building of a model of the common house fly, *Musca domestica,* in plastic as it would appear if it were enlarged to 64 diameters. In overall measurement the fly was 27 inches from its antennae to the tip of its wings and 16 inches high from the base to the top of the head. Two people spent 1,085 hours in building the fly with an outlay of $167.37 for materials and incidentals. This estimate of time did not include the hours spent in correspondence with the museum which had commissioned the project, the time spent in consultation with scientists, or the time expended in collecting specimens.[1]

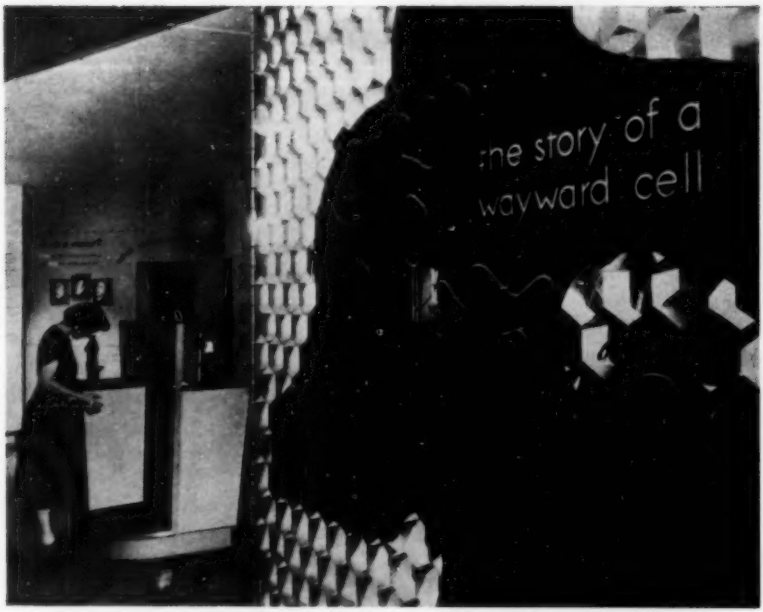
However, it is not necessary to commission, at relatively high expense, special models, or to hunt over the countryside for specimens. There are a number of biological supply houses which sell models, specimens and other suitable material for exhibition purposes.[2]

Thus, for example, if an exhibition is being prepared on typhus, a mounted specimen of the vector, the human body louse, can be obtained for 50 cents. Similarly specimens of hookworms and other internal or external parasites may be purchased (they would have to be shown through the use of low-power microscopes or through the use of projectors) to illustrate the complete life-cycle of a parasite. Models may also be purchased of common parasites or of body organs (a set of models illustrating the human parasite *Clonorchis* costs $30 ; models of the human kidneys to be used to explain their role in maintaining bodily health would cost $70).

In the past few years an ingenious method of preparing larger specimens has been perfected. This is the mounting and preservation of specimens in clear plastic. One can purchase sets to mount specimens at home, but it would probably be more convenient to purchase them already mounted and prices range from $1 up to $10–$15 for such prepared specimens. These mounted specimens are very useful in teaching situations, as they are

[1] Olsen, 1951.

[2] Examples of these supply houses include the following : FRANCE : Ets. Bioplastique, 9 rue Nicolas-Taunau, Paris. GERMANY : Phywe A. G., Postfach 102, Göttingen. UNITED KINGDOM : Flatters & Garnett, Ltd., 309, Oxford Road, Manchester, 13. UNITED STATES : General Biological Supply House, Inc., 761–763, East 69th Place, Chicago, Illinois ; Ward's Natural Science Establishment, Inc., 3000, Ridge Road, Rochester, 9, New York.



not fragile and can be freely handled and examined in detail.[1]

Besides biological supply houses, another source of material would be the loan or sale of models from natural history museums or from health museums. An example of this would be the Cleveland Health Museum (Cleveland, Ohio) which manufactures and sells the Dickenson–Belskie models illustrating human reproduction. These models have been used for educational purposes, to inform the general public and correct many misconceptions about human reproduction, and they have also been used as teaching aids in medical schools.[2]

Museums have become much more active in their educational programmes in recent years. Exhibitions are designed to attract the attention of the casual visitor. Descriptions and labels have become increasingly terse, placing the focus of interest on the actual material shown. Some museums have placed leaflets beside the exhibits, explaining the subject matter in detail, which the visitor may take home to study. Many museums have active programmes run in co-operation with the local or regional school systems. These take the form of having excursions come to the museum where children may be taken on a conducted tour, or

[1] Prices quoted are from the catalogue of Ward's Natural Science Establishment, Rochester, N.Y.

[2] The Cleveland Health Museum has made duplicates of many of its outstanding exhibitions to be used by Public Health organisations, as well as for other health museums.

travelling exhibitions may be prepared and sent out on circuit.

Generally speaking, when considering the use of specimens in teaching children, they have been found most effective when they are integrated with the school programme. Children become very interested in seeing the actual specimen or a model of the object which they have been studying. Under such circumstances the socratic method can be very effective. On the other hand direct lectures seem to work best with an uninitiated audience. Generally, museum exhibitions are planned with the latter in mind. Therefore, contemporary exhibitions have become provocative in order to attract and sustain the interest of the casual visitor. An excellent example of such an exhibit would be the transparent woman, "Juno", at the Cologne Health Museum. This is a full-scale model of a woman, in plastic, in which various organs are shown which light up as she describes their function.

A further extension of museum techniques in health education is the establishment of a hospital museum (The Lankenaux Hospital, Ardmore, Pennsylvania). It is used to instruct patients so that they may understand their course of treatment, and it is also used as a community centre for health education. Museums have also expanded into radio and television. One example is the TV programme of the Cleveland Health Museum, "Prescription for Living", which is shown throughout the State of Ohio. A mythical family, the Hamptons, discuss a medical or health problem, frequently citing "old wives' tales". Once the problem has been presented the scene shifts to another set where an interview is conducted with a guest physician in which visual aids from the Cleveland Health Museum are used to explain the problem and latest medical information is given. There is a follow-up in which digests of the programme are sent to viewers on request.

In summary, museum exhibitions constitute a specialised type of visual aid. They differ from other types of visual aid programmes in that they tend to use three-dimensional material, preferably actual specimens, models or replicas of objects. Their effect as visual aids is heightened by the interest of people in the "real" thing.

References

Gebhard, Bruno. 1947. The Health Museum as a Visual Aid. *Bulletin of the Medical Library Association.* Vol. 35, No. 4, October.

——. 1948. The Cleveland Health Museum. *Museum*, Vol. 1, No. 3, Unesco, Paris.

——. 1953. New Trends in Visual Health Education. Leaflet of the Cleveland Health Museum.

Olsen, C. E. 1951. Giant Model of a House Fly Cast in Polyester Resin. *The Museum News*, October.

Osborn, E. C. 1953. Manual of Travelling Exhibitions, Museums and Monuments series. Vol. 5. Unesco.

Rivière, G. H. 1949. The Museum and Adult Education. A Report. *Adult Education, Current Trends and Practices.* Publication No. 636 of Unesco.

Plastic model of a woman, made by Deutsches Gesundheitsmuseum, Cologne. An ingenious lighting system illuminates the organs one after another, in synchronisation with recorded talks.

HEALTH EDUCATION AND SANITATION*

By MAYHEW DERRYBERRY, Ph.D.
Chief, Division of Public Health Education, U.S. Public Health Service

OVER the years, sanitarians have made great strides in reducing disease through their efforts at controlling or eliminating those factors of the environment that favour transmission. They have built central facilities for water supplies which could be made safe through filtration and chlorination; they have installed sanitary sewage collection and disposal systems; they have drained or treated swamps and other mosquito breeding places, and the like. These activities have brought about dramatic reductions in disease incidence, disability, and mortality, particularly in centres of population where such centralised services are practicable. The results have been accomplished largely by the sanitarian's own efforts. After securing official approval and the necessary resources (materials and labour) the sanitarian has been able to use his understanding of biological phenomena, his ability in engineering planning, and executive skill in directing the activities of others to effect the desirable environmental changes without necessarily gaining the widespread understanding or participation of the people themselves.

But in villages and rural areas the same type of centralised environmental improvements are not feasible. Although the basic principles of sanitary science still apply, many of the actions that are necessary to break the chain of disease transmission must be taken by the people themselves. Such actions may include providing themselves with sanitary facilities, changing their personal behaviour, and/or carrying out specific sanitary measures, such as D.D.T. residual spraying for mosquito control. In such situations skilful application of the sciences of human behaviour is as essential for success as the competent use of the sanitary sciences.

Application of the behaviour sciences—an essential part of

*Originally published as "Health Education Aspects of Sanitation Programmes in Rural Areas and Small Communities", *Bulletin of the World Health Organization*, 1954, **10**, 145–154.

effective education—follows the same broad pattern as is used in applying the sanitary sciences. The basic steps in the process are:

1. The essential facts on which to base a programme are obtained. The information needed includes not only facts about the particular situation, but also the broad scientific generalisations that apply to all situations.
2. A programme is planned. With the known facts about the situation and an understanding of what may be expected from various courses of action, decisions are made and a plan most likely to be effective is developed.
3. The planned programme is put into operation.

The remainder of this paper will be devoted to some of the specific factors to be considered in each step of the process of programme planning as it applies to education.

Assembling the Essential Facts

There are many items of information about the people of any community which must be ascertained before an educational programme can be effectively planned. Some of these stated as questions are:

1. *What problems do the people recognise and have interest in doing something about?* People are willing to act with reference to any situation only when they are dissatisfied with what they have, and desire a change. For example, if the people of a community feel that malaria is their major problem and do not recognise the seriousness of enteric diseases, they will more readily participate in activities to cut down the incidence of malaria than in those focused on safe water or excreta disposal. Actually, any attempt to get them to work on reducing diseases of the intestinal tract when their major concern is malaria control is likely to be met with passive or even active resistance.

If, on the other hand, the people are unconcerned about any of their environmental health problems as the sanitarian sees them, then the first task becomes one of finding ways to sensitise the people to their sanitation problems, rather than education about how the problems can be solved.

Finding out what problems trouble the people provides guide lines for beginning the sanitation programme and determines in part what should be the content of the educational effort.

2. *What information do they already have about their problems? What do they perceive as the cause and the possible solution?* Foster[1] writes: "The public health specialist is not

[1] A Cross-Cultural Anthropological Analysis of a Technical Aid Programme. Smithsonian Institution, Washington, D.C., 1951. Summarised in "Changing Health Concepts in Latin America". *Health Education Journal*, April, 1953.

operating in a vacuum ; his subjects do not feel he is bringing light on a problem about which they know nothing. Rather, he is working in an area in which the subjects have definite and hard-to-shake beliefs." Some of these ideas may be correct, but even if they are not, the people are just as sure they are correct as the sanitarian is sure they are mistaken. There must be full knowledge of the people's information as a basis for planning an educational programme. For example, people who understand the relation of unsafe water and insanitary excreta disposal to the enteric diseases, need only technical advice and assistance in finding the way to protect their water or to dispose satisfactorily of their human wastes. On the other hand, people who perceive the enteric diseases as being associated with the seasons, the growth of some plant, or as falling out of harmony with the forces of nature, require an entirely different educational content and approach before satisfactory solutions to the problem can be achieved. In this latter case, they must not only learn the scientific facts about the causes and prevention of intestinal diseases, but some methods must be found to help them fit the scientific information into the way in which they now perceive the situation. For example, the malariologist, L. L. Williams, recounts the instance of a rice area in China where the people believed that sleeping in the lowlands caused one to contract malaria. To avoid the disease, the workers in the rice paddies had adopted the custom of building their homes in the highlands above the area where the mosquito was prevalent. The workers travelled down from their homes each morning to work the rice and returned each evening. With a knowledge of the beliefs and behaviour of the people, an approach to the education of the workers about the real cause of malaria and its control became readily apparent.

Just as adequate planning for the laying of a gravity water line requires information about the topography of the land, and the type of soil and rock through which the pipe must be laid, so effective planning of the educational programme about sanitation requires data on the information, beliefs, and misconceptions which the people have.

3. *What are the usual channels of communication in which the people have confidence?* In every society there exist methods by which information is communicated among the people. These channels of communication may include: " (a) the village story reader or teller ; (b) the homes of recognised community leaders, the carriers of prestige where people gather for up-to-date and authentic information on various topics ; (c) conversations of womenfolk at the village bakery and village well, and during social visits or while doing field work ;

(d) news and views exchanged during the weekly market and during religious festivals ; (e) the village crier who informs the whole community of important news by shouting it out at night ; (f) key persons, such as the teacher, the priest, or the headman, who read the paper or other literature to the people and pass on instructions from authorities ; (g) conversation of men in coffee houses, at threshing floors, during social visits, and sometimes while doing field work ".[1] In other societies, there are many clubs, associations, religious institutions, voluntary health agencies, and the like, through which information is transmitted.

As a basis for planning, the sanitarian needs full data on the channels through which information reaches the people. He also needs to know if there are any parts of the population that are not reached through any of the existing methods of disseminating information. Even in societies where there is a multitude of organisations, studies have revealed large segments of the population who would not be reached through the existing groups or organisations.

4. *Who are the individuals to whom the people look for advice on the actions they take?* In other words, who are the leaders of the people ? Not only is it necessary to find the titular leaders such as the mayors and governors, but also those whom the people follow—the natural leaders. This latter group is often overlooked, yet all too often they are the key individuals to whom the people turn for advice and counsel. In addition to finding out who these leaders are, it is essential to know what specific information they have and whether they have any interest in doing something about the problem.

5. *What are the social, economic, cultural, and religious characteristics of the people—their value systems, customs, beliefs, and ways of working—that may influence what action they will take?* The importance of some of these factors has already been indicated in the discussion above. However, their strong influence on the types of behaviour changes that are possible merit special mention. The sanitarian may need the help of an anthropologist or social scientist to guide him in securing the kinds of data in this area that should be known before programmes are planned. The following incidents merely illustrate the kinds of information that need to be considered. In certain cultures the number *three* is a ritual number ; in others, it is *seven*. In such situations the actions which may be suggested might be organised into three or seven steps. In some

[1] *Experience with Human Factors in Agricultural Areas of the World.* Extension Service and Office of Foreign Agricultural Relations, U.S. Department of Agriculture. May, 1949.

cultures, bad smells are thought to be a cause of disease. Such a belief can readily be used in connexion with a sanitary programme for garbage disposal, but it may interfere with a privy-building programme, particularly if the area is a hot, dry area where the faeces left outside of a privy dry up in a short time and quickly become odourless. In other cultures where the people value the life of all living things, the advice to kill germs by boiling water is likely to be met with resistance.

A thorough knowledge of the beliefs, mores, value systems, and other social and cultural factors will aid in tying the environmental sanitation programme into the usual thinking and behaviour patterns of the people and avoid pitfalls of misunderstanding and distrust.

6. *What resources exist in the community that can contribute to the educational programme? How do they function in the community?* Are there any related programmes into which the environmental sanitation programme can be fitted? The schools, where they exist and serve a large portion of the child population, are often a valuable resource for any community betterment. In considering the schools, however, it must be recognised that the teachers, principals, and supervisors may have other interests than sanitation and want the schools to concentrate on other problems which they consider more important. Other groups that may be willing to help, since environmental sanitation will also contribute to their overall objective of community betterment, are those conducting programmes of: fundamental education; economic development; agricultural extension; rural and vocational education; village self-help; and religious education. If the sanitarian learns all about such resources, their goals and methods, and assists them in their programmes, they will join him in the improvement of the sanitary conditions in the community. If, on the other hand, he chooses to go alone, he may encounter competition rather than co-operation.

Planning for Behaviour Changes in the People

The preceding section outlines the kind of data about the community, its people, their thoughts, feelings, and ways of working that are needed for effective planning. However, it is not necessary or desirable for the sanitarian to gather all of the information himself. Instead, considerable impetus will be given the educational programme if, through a self-survey or study, the people discover answers to many of the questions for themselves. Therefore, the sanitarian's first step in planning is focused on the way in which he can most effectively work with the people. He is concerned with helping them to make such changes as they decide are desirable, not on doing the things he has decided are good for

them. As he goes about this planning, there are a number of factors to be considered, which again are stated as questions:

1. *How can the people concerned be brought in on the planning of the individual or group action required?* The first consideration is "Who are the people concerned?" Certainly the leaders, both titular and natural, for they will give guidance on the subsequent things that the people may do. In fact, their influence is so great that they have sometimes been called the "gatekeepers" to action. But in addition to these gatekeepers there are the people themselves. The sanitarian must plan so that all of those concerned will participate in deciding what shall be done and how. Planning for this participation of the people is especially important where the sanitary behaviour that will protect them is a practice that must be followed consistently, such as boiling water, using a sanitary facility, and the like, instead of a single action such as an immunisation or constructing a central water supply.

Obtaining the participation of the people in planning what shall be done is emphasised because the scientists of human behaviour have established that people will do those things that most closely satisfy their needs in life as they see them; in other words, people will choose to do the things they want to do. When people have a part in studying and planning the ways in which they will solve a problem, they are much more likely to carry out the planned action. Ivah Deering expresses this fact in her book, *Let's Try Thinking*,[1] in these two statements: "To think (a problem) through within and with the assistance of the group is to build under subsequent action a foundation which will stand greater storms and stresses, for it is made up of understanding, co-operation, and common effort", and "Those who have had a part in making decisions will not see those decisions lightly set aside".

There is no standard blueprint of how the participation of the people can be obtained. The sanitarian will need to use all the information that has been accumulated, be resourceful in his methods, and patient in his approaches, for people do not quickly change practices of a lifetime.

2. *Within the limits of achieving the sanitary goals, what are the various solutions that may be offered the people?* In other words, are there a number of ways of achieving the environmental improvements from which the people may choose, and what non-technical decisions can be left entirely to them? Although it is essential that the people participate in the planning of the actions they will take, there are many decisions which cannot be left to them. Such decisions are those that

[1]Deering, Ivah. *Let's Try Thinking*. The Antioch Press, Yellow Springs, Ohio, 1942.

are prescribed by sanitary science. For example, whether malaria is transmitted by mosquitoes or bad air is not a question to be decided by the people. Sanitary science has proved that the control of malaria requires breaking the chain from the sick person to the vector to the well person. Likewise, preventing enteric diseases involves proper personal habits, sanitary disposal of human wastes, and safe water. However, there are a variety of ways in which these control methods may be realised. The wise sanitarian will advise on the technical aspects of achieving control, but leave to the people the kinds of decisions which, although technically unimportant, are important in the ultimate actions of the people. For example, whether privies are built with or without risers is unimportant to the technician. Nevertheless, situations have been reported where privies with risers were built for the people and none of the people would use them since they preferred privies over which they could squat.

In any situation there will be many alternative technical solutions to the problem. If the sanitarian communicates effectively the various methods, their advantages and disadvantages, then he can rest assured that the decision of the people will be the one best for them and the one they are most likely to carry out.

In the educational phase of a sanitation programme, almost all of the questions about methods to spread information and secure action can be decided more effectively by the people. The sanitarian must take responsibility for the technical accuracy of the information. He may also advise on methods based on his previous experiences, but final decisions can be left with the people.

3. *What informational materials are likely to be needed; how and when will they be used?* In every programme, some means of spreading the information becomes essential as the programme progresses. The sanitarian should consider in his planning what types of informational material may be needed. For example, in a population with a high proportion of illiterates, audio-visual materials may be required as aids to communicate to the people. To be effective, such materials should be locally planned by the people concerned, related to their needs, and, if possible, produced by them. Many workers have reported misunderstandings that have been transmitted or resistances that have been stimulated through the use of materials developed in another country for people with a different social, economic, and cultural background.

In almost every situation, resources such as local artists, writers, and printers can be found to produce economical and simple illustrative, informational material. Enlisting the

participation of such people not only provides material economically, but it also contributes to the educational programme, for they must learn the information before they can develop material to transmit it.

Knutson[1] has developed a series of conditions that must be met in order for informational materials to be effective. With some of his associates, he has shown how materials might be pre-tested in the process of being produced to see if they satisfy the conditions for effectiveness. Through such checking, possible misunderstanding can be eliminated, and the likelihood of effectively transmitting the message is greatly enhanced.

Probably more important than the production of informational materials is the timing of their use. All too often, sanitation programmes are initiated at a time convenient to the sanitarians. Since the people are the ones whose participation is needed for success, the timing of the entire programme should be determined by them. They will know when there is a real felt need for information and what types of facts need to be presented. The programme should be timed when there is the least competition for interest and action. In this connexion, the practice of conducting informational programmes at fiestas or during carnivals, on the basis that the people can be reached (physically), may well be questioned. One might ask: "Will the people learn about health problems when their primary concern of the moment is having fun; in fact, escaping from the depressing situations of ill health with which they are daily confronted?"

4. *How will barriers to the success of the programme be overcome?* Are there economic limitations that will interfere with the success of the programme? Is there a shortage of materials, such as pipe, cement, or D.D.T. that would limit wide-scale action by the people? If so, the sanitarian must have planned for a demand that may arise if the educational programme is more successful than he had contemplated.

Another barrier that may be present, and for which the sanitarian should plan, is the attitude of the people towards technicians. Do they see individuals from outside their group as people from whom they obtain help, or do they see them as authoritarians who interfere with their customary routines and impose burdens upon them? All too often the technician's behaviour justifies this latter attitude, simply because he has not carefully planned a way of work in which people will see his desire to be helpful.

[1]Knutson, Andie L., *et al. Pretesting and Evaluating Health Education*, Public Health Monograph No. 8, U.S. Public Health Service, Federal Security Agency, 1952.

5. *What will be the criteria of progress in solving the sanitary environmental problems?* Will the sanitarian measure his achievements by the number of sanitary installations made in a given period of time, or will he accept as his criteria of progress the goals which the people set for themselves? As engineers who are accustomed to setting target dates and being able to measure their success in objective terms of units completed, it is only natural that they should choose the former method of measuring accomplishments. If, however, the sanitarian is also concerned with lasting improvement in the sanitary behaviour of the people, he will measure progress in terms of the extent to which the people accept responsibility for setting their own goals and then moving towards their realisation. In other words, he will have a sense of achievement not in the number of privies built, or the number of wells or springs made sanitary, but in the increasing responsibility assumed by the people to put into practice the technical information they have learned and in their mounting desire to take other actions for the improvement of their living conditions.

Carrying out the Programme

If careful study and planning with the people for the educational programme have been done as outlined above, few problems should arise in the actual operation of the programme. The major task is to check progress in terms of the criteria which have been set. Here the sanitarian can be most effective in assisting people to accept responsibility for their own improvement. He can help to set realistic goals, ones that can be accomplished in a sufficiently short period of time to bring a feeling of achievement. He can help the people see progress even though the goal was not attained, and assist in revising the targets and target dates in a way that brings satisfaction rather than discouragement.

As the sanitarian follows his plans of helping the people, he must be ever alert to any misunderstandings or hostile attitudes that may be developing. Such situations require a re-evaluation of his own plans, a diagnosis of the source of the misunderstanding, and a finding of ways for the people to participate in correcting the situation.

Summary

In the conduct of a programme for sanitation education, one makes use of the scientific findings of the social sciences (the sciences of human behaviour) in the same manner that sanitary science is used in planning specific environmental sanitation improvement. In both situations, all the pertinent evidence is collected and related to the general scientific principles that

apply. From such study a plan is developed, tested, put into operation, and watched to see that expected results are being achieved.

Such an approach to education produces a dynamic programme which recognises the importance of an individual's own attitudes and those of the group with whom he identifies, in controlling his behaviour. It is more than a programme of giving information through posters, newspaper, radio, or motion pictures. It takes into account an individual's past experiences and the imprint they may have left on his thinking and attitudes, the information as well as misinformation he now has, what he wants in life, and the way in which these factors influence what he will learn and do. It also recognises the effect of customs, traditions, religious beliefs, and the part the group plays in determining what is socially acceptable behaviour for a given individual. Finally, it accepts the principle that each individual has the right and responsibility to decide for himself the actions he will take for the benefit of himself and his community, and provides a means by which decisions for action can be made, based on scientific data and technical advice.

ANATOMY FLANNELGRAPH

A flannelgraph dealing with elementary anatomy, and suitable for laymen, first-aid workers and nurses in training, has been prepared by the Central Council for Health Education in co-operation with the St. John Ambulance Association. It consists of movable parts covering the bony structure and the more important organs. Complete with backcloth, felt, etc., price 37s. 6d. (C.C.H.E. subscribers, 30s.), from The Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

HEALTH EDUCATION IN INDUSTRY

A Case History

By OLGA MAČEK, M.D.,
Central Institute of Hygiene, Zagreb, Jugoslavia

After World War II a crowd from the country, even from the remotest areas, rushed into towns and other centres where industry was being built up, with a view to finding a job there. These workers were on a relatively low level not only with respect to their skill, technical knowledge and training in general, but as regards their general culture, and consequently their hygienic habits as well. There were among them even illiterates.

The great need for health education was felt on every hand. First, physicians started to deliver lectures about public health. The labour organisations had a list of physicians and themes they were to talk on. Invited by a labour leader, the physician came to the factory to deliver a lecture on typhoid, tuberculosis, colds, rheumatism, and the like, to some hundred workers after work. However, the difficulties of such work soon emerged, since almost all workers, being tired and hungry after having worked for eight hours, tried to hurry home. Only a small number of workers attended the lectures, generally the most educated, for whom the lectures were not intended. All possible means of preventing workers scattering after they had stopped work were tried, but the attempt to persuade workers by compulsion in any form whatever had the opposite effect. No doubt this was one of the reasons why people in worker collectives responded so reluctantly to the various campaigns for vaccination and mass radiography.

But in addition to the fact that workers were reluctant to attend lectures after their shift was over, physicians were not willing to deliver lectures at that time either. (In this country working hours are done without interruption in general.) Moreover, there were many enterprises but few physicians. In order to get over these difficulties, physicians used to write their lectures on public health matters, and they were then read at labour meetings. However, this type of health education did not prove successful either. Little by little the labour leaders got tired of agitating for lectures among workers, so that the lectures on the former scale gradually died out.

The Department of Industrial Health at the Central Institute of Hygiene in Zagreb, whose experiences we are going to report, has but a small staff who, being overburdened with problems of industrial hygiene, have never thought of approaching health education. They had only written popular articles and booklets on the problems of industrial hygiene, such as lead poisoning, benzol poisoning, air conditioning, proper lighting, etc.—all this for the Health Education Department of the same Institute, which had the task of publishing and distributing this material. However, quite imperceptibly we began to occupy ourselves with problems of health education, without even being aware of this fact.

Our Department had undertaken two new tasks: First, to approach the problems of psychophysiology of work and, second, to introduce socio-medical work into factory health centres. For this purpose a woman psychologist who had just graduated and a public health nurse who had just finished training were engaged. Both had first to become acquainted with the factory, the internal laws reigning there—briefly, with the everyday life of an industrial worker. Both were sent to a rather neglected textile factory where they were to stay for about 8–10 months—the psychologist with a view to studying the problem of recreation, and the public health nurse with the task of carrying out a little social work programme. They worked there under my supervision and were assisted by me.

Working with People

We met with resistance from the factory administration, who accepted our officials reluctantly, though they had to pay nothing for their work. We had to make use of our authority as sanitary inspectors to compel the factory administration to agree that "the experiment" be carried out. When our psychologist suggested that the time of recreation in one of the factory departments be prolonged from a quarter to half an hour, since she was convinced this would enhance the productivity of the work and make the workers more content, the technical manager opposed the idea. He considered these principles to be illogical, arguing there would be a smaller output if the weavers' looms were operating a quarter of an hour less. Assisted by the nurse, our psychologist insisted upon the installation of an appropriate cloakroom, canteen, women's lavatory, etc. However, the factory administration would not yield and both officials began to doubt whether they would be able to break this resistance. So we sat down and worked out a plan for the conquest of this stronghold.

The attack was launched in three directions. At a meeting of the labour council I delivered a lecture on care of workers and the importance of such care for greater output and better quality of production. The labour council, consisting of about 50

workers of both sexes, were enthusiastic, since the lecture dealt with the concrete requirements of their work exclusively. However, it often occurs that decisions taken by a labour council have to cover a long distance before materialising, the administrative and financial channels being rather tortuous. They may even remain unfufilled if there is nobody who will earnestly work for their realisation. Since everybody has his own work and sorrows, such decisions may fall into oblivion, especially if the management is not in favour of their realisation. In order to avoid this, we looked round for allies and found them in the persons of a sympathetic foreman, the chairman of the labour council, the secretary of the factory labour union, the commercial director, and some others. Both our officials had a talk with each one and persuaded them of the necessity for caring for the workers and the importance of their being more content if they are given concessions by the factory management.

The third line of approach in health education was activity among the workers. Both officials visited all the halls every day and had talks with the workers. Before long they became popular among the workers, who asked a lot of questions and applied for advice. Most of the questions put to them referred to menstruation, conception and birth. There was great ignorance and superstition among the workers with respect to these questions. Thus the themes were brought out and the need for explanations shown. This, of course, could not be done in individual talks with the workers, and the question arose: where and when ?

Linking Health Measures with Education

Our psychologist had succeeded in introducing a half-hour recreation period in some of the factory departments. However, the question where this free time would be spent arose. (During the 15-minute recreation the workers used to have their breakfast by their machines.) The answer was: in the labour union hall, which, however, could not be heated. Another problem to be solved was the provision of tables, benches, stoves, to have the room whitewashed and to turn part of it into a canteen. Assisted by their team of collaborators, which was growing continually, our officials succeeded in overcoming all these difficulties, giving the workers an opportunity of having their half-hour recreation in this room. Both our officials stayed with them during this time, answering various questions. And thus we came to see the advantage of delivering lectures during the half-hour recreation.

We tried to find a way of making these lectures interesting. We consulted our Department for Health Education, and they suggested showing slides and flannelgraphs. Our psychologist worked out the filmstrips—" Menstruation " and " From Conception to Birth "—and began to show them. At the first lecture

some women workers asked that the males should withdraw, and we were at a loss what attitude to take. An old woman worker helped us to get rid of this embarrassment by saying, "Let the men stay, and they will learn how we feel!" And so they remained. Thereafter films on health were shown during recreation time twice a week, both of home and foreign production. During this time the workers had their breakfast at ease, put questions, made objections, and got answers. Often there were jokes and laughter. Thanks to such individual contact, and particularly to the results obtained, the opposition of the factory administration was gradually overcome. A plan for a new building with cloakrooms was worked out, and two rooms for the personal hygiene of the women workers and another for first-aid emerged. Many a change for the better was made in the new working halls on the advice of the sanitary engineer of our Department. But, most important of all, the prolonged recreation time, having shown an increased productivity, was extended to all the departments of the factory.

Simultaneously we started to tackle individual social cases. Let us mention that of a young girl, a schizophrenic, who used to have conflicts with co-workers almost every day. No foreman would have her in his section. The hospital would not admit her, since she was not dangerous, and she could not be pensioned because she did not possess the necessary documents to prove her labour service. Nobody thought, of course, of dismissing her, and the factory administration was at a loss how to solve this case. However, our nurse succeeded in collecting all the documents proving her labour service and got them verified legally, whereupon the worker was pensioned. This case helped in establishing a better relationship between our officials and the factory administration.

Teamwork

At that time teamwork was instituted. I do not recollect whether we used this term then; I think we called it "health activity". Some advanced women workers had expressed the desire to devote themselves to health problems with a view to enlarging their knowledge. And thus a first team consisting of 12 women workers was instituted. They used to come to our office either in the morning or in the afternoon (according to their shifts in the factory), and first of all they were shown the aforementioned filmstrips. Later, some of them showed these films in their departments with great success.

Then the idea struck us that these women workers could be our assistants in the health education of other workers. Each member of this group took on the education of one of her co-workers who was behindhand with regard to simple hygiene. The question arose: how? I told them they had to be cautious and tactful, since every person represents a particular case requiring

special treatment. The next meeting proved to be very lively, since everybody wanted to relate her experiences at the same time. "I told her not to stay bare-footed on the concrete sockle of the machine, otherwise she would catch a cold," said one, but she got the reply: "It is not your concern!" Another, having remarked to a co-worker that it was not decent to come to work in a dirty and ragged dress, got the reply: "What about buying me a new one?" And so on. However, some of the older team members had performed their tasks earnestly. Thus, one of them said she had spoken in a motherly way to a young woman worker who had the habit of getting drunk from time to time, so that she finished by melting into tears. "No doubt, a sign of a good start for my influence," said the good soul. We discussed every case separately and made suggestions for another way of treating those cases with which a first approach had failed.

Training the Leaders

Somewhere at that time one of our leaders in health education who had come back from a six-months fellowship in the United States brought along a lot of new ideas and instructed us on how teamwork could be carried out. This led us to read up-to-date literature on health education. As a consequence, we instituted a seminar for foremen in the same textile factory. We had prepared ourselves for this seminar in particular and our psychologist had worked out a few special filmstrips. The themes to be dealt with at the seminar were:

(*a*) The purpose of the seminar. I spoke to the foremen about the frequent incidents occurring during work-time, the high words sometimes exchanged, provoking even tears; the quarrels with superiors and co-workers, the reporting against one another, the insults and dismissals from work resulting from these and similar happenings. I pointed out to them the serious consequences of such incidents, both for the individual and the whole factory. All of us know this is not fitting, but nevertheless it occurs. I invited them to analyse these happenings jointly with a view to finding out the causes and how to change personal relationships for the better.

(*b*) What is fear? Filmstrips were shown on the problem of fear and its consequences in later life.

(*c*) Foreman and (woman) worker. A relationship between foreman and worker was shown, leaving it to the team to pass a judgment and put up principles of a proper relationship.

(*d*) Foreman and his superiors. The same problem of an abnormal attitude on the part of the superior towards the foreman was dealt with.

(*e*) Care and work. A filmstrip dealing in detail with these problems was shown.

(*f*) Tiredness. This problem was shown both in the factory and at the worker's home.

(*g*) Nervousness. The team were shown the meaning of this common word and they were asked which attitude should be taken by superiors towards so-called "nervous persons". They suggested many an appropriate way.

During this seminar we became aware what excellent analysts and understanders of human frailties these foremen were. They discussed all the problems very vividly and always succeeded in finding out the right solution. Our intervention consisted of:

(*a*) drawing into the discussion those who kept silent;

(*b*) making use of their arguments for seeking a correct conclusion based on our knowledge, especially as regards the consequences in later life for a man who had had a poor upbringing during his childhood;

(*c*) stopping those who were speaking too much;

(*d*) a final and clear formulation of the decisions taken.

We should like to point out that the foremen themselves would set forth very good examples, similar to those they had seen in the filmstrips.

Later we had two more seminars, somewhat different from the previous, one in an ironworks and another in a metallurgic factory. The former was based more on the psychology of work, the latter on the causes of accidents. Before the lecture on the latter subject had been delivered, all those attending the seminar were given a short questionnaire to fill in. The questions were put so as to get a rough idea of the workers' opinions on the mechanism of accidents at work. We were surprised to learn how many of them were of the opinion that injuries at work occurred by chance, and "owing to the inattentiveness of the worker". Many of them thought that injuries might be prevented by applying sanctions in those cases where the worker had not made use of protective devices, and the like. The seminar at the metallurgical factory proved to be very successful. At the end we showed them an analysis of injuries at work which we had elaborated in detail. The discussion was very brisk, with almost everybody taking part. Thanks to the collaboration of the factory director and our nurse, who both proved to be very active, the number of injuries in that factory has considerably decreased.

Planning for Long-term Activity

However, in the course of time we became aware that though teamwork in factories was shown to be very useful, its influence gradually faded if there was no one who would occupy himself with this work continuously. In our opinion, this could be done best by the public health nurse attached to the factory. Although the task of the nurses is to do preventive medical work, they can

easily acquire an additional qualification as health educator. Unfortunately, there are but few of them. However, we already had a seminar with them and continued to meet once a week to discuss various cases which were then settled by them individually. In our view, these nurses ought to be the vehicles of health education in factories. Some of them have already found their level. Thus, in one factory, the nurse had regular discussions with workers on illness and health. These discussions were held in the waiting-room of the health station in the factory, where 20–30 workers are always present. She even showed them filmstrips.

As regards other themes, we have left behind typhoid fever, diphtheria, scarlet fever and tuberculosis; we talk more about health than about disease. In flannelgraphs we show what one ought to eat, when and at what intervals, which water is best for drinking, etc. Our activity in the factories is not restricted to preventive work only, but extends to health education and socio-medical work as well, and there are no limits. The nurse, while taking food samples in the canteen for a check on their caloric value, is at the same time asking the assistant cook why she did not put on her cap, remarks that the shelf where the plates are kept is uncovered, and asks the cook whether her husband is feeling better and whether he is still in bed.

In general, and on the grounds of our little experience, we are of the opinion that the care for man ought to embrace all his daily requirements. A public health nurse, who shows an aptitude and love for this work, can, if well trained, deal very satisfactorily with these human problems. We do not favour too much specialisation, with work split up between social worker, health educator, preventive medical worker and the like, in one and the same enterprise; one has visions of notices reading, "Is your flat infested with vermin?—Apply to the disinfector!"; "Is there too little room in your flat?—Apply to the social worker!"; "Is somebody ill in your home?—Apply to the nurse"; "Is the sanitary equipment in your home out of order?—Apply to the hygienist!" In our opinion, specialisation is necessary only with highly-qualified personnel who are engaged in complex problems.

Our small teams (one physician, one psychologist and one nurse) do not belong by their education either to the field of health education or to welfare or mental hygiene. Since they have been trained in industrial hygiene, we think there is no obstacle for going on with our work. There is no question of fixing competences.

And here our story comes to an end. We cannot foresee whither this work will go in the future. We rely upon being led by real life and its requirements in the enterprises, as we see them from all their different aspects.

Refresher

THE PROBLEM OF PAIN IN CHILDBIRTH*

By GRANTLY DICK READ, M.A., M.D.

THE problem of pain in childbirth will not be solved by discussions upon drugs, analgesics and anaesthetics. Fear is the great enemy of parturient women and is largely responsible for the development of pain.

The pain of labour is due to tension caused by fear. The pain intensifies the fear, which in turn increases the tension by resistance. At length the vicious circle of these three evils—fear, tension and pain—destroys all confidence and self-control. Then fear is magnified to terror; pain becomes the agony of torture; and tension the gargantuan grip of paralysing rigidity from which there is no escape. If this syndrome is established it must be broken down as quickly as possible, for its ultimate development usually results in the necessity for instrumental interference with labour, a risk of serious shock and permanent injury to the mind of the mother. Effective anaesthesia must be administered without delay for *in such cases* unconsciousness is the lesser evil.

At first sight this appears to be a satisfactory solution to the problem, but although inhalation anaesthesia induces unconsciousness, the influence of fear continues in that part of the brain which remains active beneath consciousness.

Women who have been numbed or insensible during labour frequently describe dramatically the horrors of childbirth. Their memory is of distracting and unbearable suffering, but we know from the depth of their narcosis that they are unaware of pain sensations; only fear, imprinted in ghastly endogenous images on

*Excerpts from "The Relief of Pain in Labour", *Western Journal of Surgery, Obstetrics and Gynecology* (U.S.A.), **62**, 591-7, Dec. 1954

the mind, was recalled with return of consciousness and recounted as reality.

The pain of normal childbirth is almost negligible in the absence of fear. Relief from the discomforts of labour is found in the mind of the woman herself, and not in the phials and philtres of the physician.

In this campaign against the suffering of women, fear, the arch enemy, must be allayed. If, in spite of careful antenatal preparation, fear, tension and pain supervene, narcotics and analgesia should be available for immediate use, and must be employed to bring relief before the vicious circle of this syndrome is established.

The first principle of the relief of pain in childbirth is progressive education of the young. By this means only can the ignorance and fear of childbirth be forestalled and replaced by confidence and understanding. In order to do this, changes must be brought about in the attitude of men, women and children alike towards childbirth. This most wonderful and satisfying of all human experiences should be placed in its correct perspective in the upbringing of children and in the education of young girls.

Certain aspects of the pain of labour and the rationale of its relief may have escaped the notice of those who have applied themselves only recently to the unravelling of its mysteries.

All essential physiological functions, whether concerned with maintenance or reproduction, when implemented within the normal mean, are discharged without involving the protective mechanism of pain. This is equally true of breathing, eating, defaecation, micturition, copulation and parturition.

These activities necessary for the survival of the individual are pleasurable and become painful only when some disruption of the natural process occurs.

Diagnosis of Pain

The diagnosis of the cause of pain is one of the fundamental principles of clinical medicine, and those who obliterate it before its origin is determined as accurately as possible may court disaster. This axiom is applicable in childbirth. For generations pain has been accepted as a normal manifestation of parturition. Women have been told they must suffer because it is natural and unavoidable—and they have suffered.

The human race has developed two protective faculties, both closely associated in as much as they are activated by motor responses to stimulus. They are pain and fear. Since we are considering the relief of pain in childbirth, the neuromuscular mechanism of its origin must be explained.

There are sense organs in the body for recording painful stimuli. Their distribution is purposeful, for areas and parts

exposed to primitive injury are more liberally supplied with nociceptors than parts of the body structurally protected from physical assault. The uterus is furnished with only two types of nociceptors, and these are activated by laceration and excessive tension. Since there does not appear to be any necessity or provision for laceration of tissues within the uterus in normal birth, we are left with the conclusion that the pain of labour is almost entirely due to excessive tension.

The cause of pain therefore is tension, greater than that which is within the normal physiological mean, which will vary as the threshold of pain varies in the individual.

It has been shown that under the influence of fear the muscles supplied by the sympathetic nervous system contract. When two groups of muscles act simultaneously in opposition to each other, pain and exhaustion result. When there is no fear, the circular fibres mainly disposed in looser uterine segment are relaxed and do not resist the expulsive effort.

The Inheritance of Fear

Fear of childbirth persists because adequate knowledge of the subject is systematically withheld from the young. Their information is often gleaned from the whisperings of those who have heard whisperings. With minds warped by misunderstandings and filled with apprehension born of ignorance they marry and become pregnant. Then the full force of fear is brought to bear upon them by the ill-judged sympathy of friends and affectionate relatives. Young women are in fact prepared for every calling in life except that which the majority of them will embark upon in the full joy and blindness of youth and love.

Throughout the antenatal months women must be instructed in matters concerning pregnancy and be made familiar with the changes within and about them. This prenatal instruction is invaluable for the relief of pain ; it is reinforced by advice upon personal hygiene and physical fitness. The control of respiration is practised and explained ; relaxation of the body and its use in pregnancy and labour are described.

Those giving antenatal instruction have a grave responsibility, for they wield a strong weapon in this fight against the pain of childbirth.

Frequently those in attendance upon women during the course of labour unwittingly disturb the parturient and foil her efforts and good intentions. The labour ward sister must be a bulwark against the onslaught of fear, and a tower of strength in time of doubt. The more alarmed the woman, the more companionship and help she needs. Such patients should never be left alone or told to "get on with it." Those who combine the imparting of confidence with kindly understanding of fear will prevent more

pain than the ultra-efficient organiser who practises impersonally by rule of thumb.

Professionally and academically the teachers of obstetrics have it in their power to revolutionise childbirth. By sending out doctors equipped with knowledge of the mental as well as physical phenomena of labour they will change the approach of the obstetrician to the woman bearing a child.

The relief from fear and pain of childbirth is not only a medical problem. It is a necessity for the survival of the cultural standards of the race as surely as strength of arms is necessary for the survival of a nation.

Summary and Conclusions

1. The vicious circle of the *fear–tension–pain syndrome* is responsible for the pain of labour. In 90 to 95 per cent of cases, severe pain can be avoided or overcome by the elimination of fear and tension. This minimises, but does not preclude, the use of drugs and analgesics, but decreases the risks incurred by both mother and child in deep or prolonged narcosis.

2. The assets of fearless normal labour outweigh the liabilities of labour with fear and pain covered by analgesics.

3. The approach to, and conduct of, natural childbirth is no longer experimental or theoretical. Ample evidence, with and without controls, proves its claim to be understated rather than exaggerated.

4. Education and antenatal instruction are important factors in the relief of pain in childbirth.

5. Those who attend women in labour must be familiar with the emotional as well as the physical phenomena of parturition.

6. The quality of obstetrics and the care of mothers and newborn babies indicate the cultural standard of a community. This highly specialised and comprehensive subject concerns not only the present but the future of the human race. The fear of childbirth and its accompaniment of pain is one of the most insidious social evils of our time.

7. The fear and pain of childbirth is the province of the obstetric physician whose specialised education and intellectual bent facilitate the understanding of emotional states and sensory disturbances. To be successful he employs mental attributes different from those of the specialised gynaecological surgeon. The incompatibility of these two authoritative vocations makes unanimity difficult upon the subject of pain relief in labour.

8. The teachers of obstetrics have it in their power to revolutionise childbirth by introducing rational and harmless pain-relieving measures. The physiology of the majority of childbearing women must receive attention at least equal to the pathology of the few.

International Report

HEALTH EDUCATION IN COMMUNITY DEVELOPMENT

By LEO L. BARIĆ
Zagreb, Jugoslavia

IT WAS Somerset Maugham who wrote in one of his novels that "Men and women are not only themselves, they are also the region in which they were born, the city apartment or the farm in which they learned to walk, the games they played as children, the old wives' tales they overheard, the food they ate, the schools they attended, the sports they followed, the poets they read and the God they believed in".

That was the idea that prompted us to begin a pilot project in community participation in a health education programme.

We chose the village of Požaranje in south-east Serbia. The backwardness and bad living conditions of the people in this area are due to more than five centuries of slavery and constant fight against the Turks, since these people represented the south-eastern defence of Europe against the Asiatic invasion. They fought constantly and shed blood in battles, their villages were many times burnt to the ground and the inhabitants sold as slaves. Therefore it is no wonder that these people have characteristics which are a direct result of their past. The people are drawn in, they do not trust anyone and suffer from insecurity and instability. These feelings are reflected in their agriculture. Generally they grow one-year crops, and one can find hardly any orchards, because in the past they were never certain who would enjoy the fruits of their toil. The same thing happens with meat production—they raise mainly cattle which one can move easily from one part to another, whereas hardly anybody occupies himself with poultry raising. Their way of living shows clearly that the people are not used to investing money and labour in house building, i.e., in something that often in the past had to be abandoned overnight.

The people represent the mixture of two nationalities, Serbs and Siptars, each with its different language, way of living and national customs. There are two religions, Greek-Orthodox and Moslem, but these religions are not restricted to each nationality.

Not so long ago one could find some customs against which the government fought with all the legal measures at its disposal: for example, the purchase of wives, blood vengeance, veiled women. Each of these customs is very interesting by itself, requires a separate study and has impressed itself deeply on the mentality of the inhabitants. On the other hand, there are a number of other customs against which one cannot apply legal measures and which reflect themselves on the national pathology: for example, insufficient nourishment, incorrect child care, very bad and unhealthy living conditions, contagious diseases, not making use of available health service, etc.

We could here also take as an example the term "health education of the people." It is quite clear that the conception of health education will differ according to the people by whom it is being carried out, as well as according to the surroundings where it is practised.

Community Resources

In communities with electricity, an adequate sewage system and good sanitary conditions, the main interest may well be concerned with the fight against cancer, dental health and fluoridation, or sex education. You can well imagine how different such a programme would be in comparison with the health education programme in the community described, where health problems cannot be separated from the economic problems, where food hygiene and nourishment cannot be separated from agriculture, and communal hygiene, as well as the way of living, from the mentality of the people and the monthly income per person.

In an advanced community conditions exist which enable us to found our health education programme on education of girls and young mothers—who are responsible for the living conditions of the whole family and educate their children in every respect. Can you imagine what results would be achieved by such a way of work in a community where only a few decades ago wives were bought like cattle and where the husband was the undisputed owner of his wife, and where *he* went to consult the physician, leaving his ill wife at home ?

Let us take one example more: a community in which we can find a number of fully qualified teachers, a health service which is available to everyone, school nurse and a public health nurse, parent–teacher association which is very active, a number of voluntary organisations trying to solve a number of specific problems. As a contrast let us take another community where there

is no qualified personnel of this kind. Even if there are teachers, their qualifications are not adequate and they are occupied and overburdened with their own problems and a number of duties, so that their work out of school consists mainly of writing out various reports and statistics. It is quite clear that there must be a difference in the personnel needed for health education work in these two kinds of communities. In the first case a professional health educator will be sufficient and his duty will be only to co-ordinate the work of those professionals and associations; in the latter case a whole team of professionals from outside will be needed who will have to live in the community for quite a spell to awaken the people out of slumber and to create the basic conditions, so that the people themselves become aware of their problems, and consequently enable them to solve their problems until later they need only occasional help.

From the above examples we come to the conclusion that there can be no standard pattern for a health education programme that will work everywhere. Each community, each country, and even each health educator will require a specific programme, and from our own experiences and results we shall see what was essential for our success. . . .

Our Programme

And now I wish to describe the various stages of our programme, and what we found during our work in that community.

The People's Republic of Serbia has more favourable conditions for health education work than the rest of our republics, since in Belgrade there is an Institute for Health Education of the people with sufficient staff and means for carrying out such a programme.

The Management of the Institute approved of changing their already planned health campaign in Kosmet into a pilot project of community organisation for health education of the people. A planning committee for co-ordination of the programme was formed, which worked out the principles and the method of work.

It was decided that a team of people should spend a certain time in the village in order to prepare everything for a detailed survey of the community. This first phase of the health education programme lasted six months and consisted of these steps:

1. To contact the local authorities and gain the confidence of the people. In this way we could secure the help of the government on one side, while on the other we could complete a thorough study of the people, their attitudes, interests, beliefs, cultural values, wants, needs and resources and thus secure a working partnership between them and the health programme.

2. To find key persons, i.e., leaders in the community who enjoy the greatest respect, authority, sympathy, confidence and

love of the people of this community. The individual leader who has the ability to initiate activity and to stimulate leadership in others is particularly important in the early stages of a programme. Therefore it is of great importance to secure the confidence of these key persons and to induce them to identify themselves with the programme.

3. To find out what resources and capacities exist in the community so as to be able to use them for solving specific problems; to what extent help will be needed from the local and central government.

4. To form a permanent body consisting of local people, i.e., a health committee that would take over the programme and carry on the work so that it would become a permanent activity in that community.

5. To carry out a detailed survey giving us full details about the life of this community.

6. To carry out an evaluation of the programme which would show us in what measure we succeeded in initiating activity of the people and in what way life in the community has changed for the better.

To sum up, our goal was to raise the economic standard, which will have a direct influence on the health of the people; and at the same time to make the people conscious of existing problems which they can and should solve themselves.

Putting the Programme into Practice

When the team started work, they encountered many unforeseen difficulties: from the problem of finding rooms and food for their members in a poor village, to the problem of convincing authorities that such a programme was necessary and could be successful even though the results would not be obvious in the beginning.

The composition of the team changed frequently, but most of the time it consisted of a physician, a psychologist, a nurse, a technician, an agricultural expert, a veterinary practitioner, a teacher of domestic science and a midwife. One of the great problems was to find people who could speak the local language, as well as a sufficient number of female members who would be able to come into close contact with the women of the village.

The village of Požaranje, which was chosen for this pilot project, is in the south-eastern part of Serbia, not far from the borders of Albania.

It lies in flat country, and has over 2,000 inhabitants, one-third of whom are Serbs of the Greek-Orthodox religion, and two-thirds Siptars, mostly Moslem.

The people occupy themselves with agriculture. The soil is very good, but the way of cultivating it very primitive, so that

the inhabitants are very poor. The cattle is scarce and there are hardly any poultry or horses.

The difference between the two sections of the population is obvious at the first glance. The Greek-Orthodox part of the population lives in roomy houses by the road. The windows look at the road and the people move freely in their yards.

In contrast to this, the part of the village inhabited by the Moslem population shows quite another picture. High walls encircle the houses and there are no windows looking on to the roads. A Christian is very seldom received in the houses and life is restricted within the walls and shrouded with a veil of mystery for the onlooker.

The roads are very bad and neglected. It is not uncommon to find dead animals lying in the street, and nobody considers it important to move them away.

There are different types of houses. They are mostly dilapidated and serve only as a roof over the head. There are cases of people sleeping together with the cattle in the only room of the house. On the other hand there are also nicer buildings, which have better sanitary conditions.

And now let us have a look at the way of life of the people in this village. They gather on market day, some to sell and some to buy. Here is a very good illustration of the mentality of the Moslem population. A man is selling something, but his goods are wrapped up in a sack. If you want to find out what he has to sell, you have to ask him. If you don't ask him, it does not matter. Allah is great, and it is written in the stars whether he will sell anything or not.

Moslem women are no longer veiled, but this does not mean that they are emancipated and that they have abolished old customs. Although a woman is not veiled, her head may be covered so that you cannot see anything of her face. Her walking behind her husband illustrates clearly her subordinate position in the family, and is not accidental.

From this you can see at what kind of a village the team of the Institute for Health Education arrived. They were met by only a few representatives of the local authorities and a number of curious children. It was not the first time that a health team had come. The villagers had previous experience and were acquainted with health campaigns concerned with the betterment of the sanitary conditions of the village.

During former campaigns the teams that came tried to solve the most obvious health problems in the village.

Traces of their work were still obvious. Lavatories built on the walls of houses were torn down by force, and the villagers solved the newly arisen problem by building new ones in the yard close to the house, but they did not at the same time solve the

problem of sewage disposal. Everything was left to chance, so that in most cases the waste flowed directly into the road.

One peasant, wishing to satisfy the team, built his lavatory in a very conspicuous place, perhaps a little too conspicuous and too far away from the house, so that it is difficult to believe that it is regularly being used by the inhabitants.

Winning Co-operation

The peasants talked a lot among themselves about the arrival of the new team, showed much curiosity and a considerable amount of mistrust, owing to bad experiences with the past health campaigns. They were daily trying to find out what this team was really up to and when the "campaign" would start. In the meantime the members of the team kept close to their humble quarters placed in the building of the Co-operative Home and started with the preparations for their work.

First of all it was necessary to discover key-persons or leaders in the village. Soon it became obvious that it would not be one person and the opinion of the villagers confirmed this. The team became aware of the existence of many problems and interests among the villagers, so that they rightly supposed that there would be several leaders, probably one for each problem. In the meantime they did not have to wait long. In the vicinity of the village mosque people gathered in the evening. Presumably the hodža was playing an important part in the village life.

A few days later the members of the team woke early to find a number of people gathered around the mosque. Men were building a fence around it. It was done voluntarily, and with this the hodža wanted to demonstrate his authority and power. The reason was given: the cattle would no longer be able to pass through the unfenced land around the mosque. It is interesting to note that the fence together with the entrance gate was finished in two days. This was a very short period of time. The people themselves brought wooden poles, though wood is very scarce.

The members of the team used this occasion to get acquainted with the hodža and to express their admiration for the work done. At the same time Dr. Tomić, the physician, had a really lucky break because he saw that the son of the hodža had a running ear. The acquaintance was sealed when the hodža was invited to bring his son for treatment.

At the same time the members noticed that there was no good drinking water in the village. In some cases the water was brought in carriages or drawn out of very bad wells. They found out that almost all the wells of the village were in very bad condition. Interviewing the peasants, they found out that one of the villagers had for years been trying in vain to make the government build a new water supply. In the vicinity, quite

close to the village, there is a strong well of clean water, and though it was only necessary to install pipes for bringing the water into the village, so far he had not succeeded. The members of the team got acquainted with this man, who was the key-person for solving the water supply problem in this village.

Through their acquaintance with the peasants they learned about many other problems. They noticed that one of the important ones was agriculture. The peasants were worried over the quality of the crop, especially tobacco, in spite of the soil being very fertile.

The next problem was health hazards in school. After the war a new school was built, but the work was not finished owing to lack of the necessary funds.

After a week, when the team had got settled and made several acquaintances, they organised the first health lecture. They used a well-known bait, the old and tested method of a film show. Before showing the film, a member of the team explained to the villagers the purpose of their arrival, as well as the methods they would apply. In this way the villagers were acquainted with the aims of the programme. The team gained their confidence by not entering their homes when not invited, by not asking them anything and not giving them any advice if not asked for it directly.

Elements of Administration

And in this way started the first part of the work: getting acquainted with the people, and gaining their confidence, with the result that a health committee was established which will have to concern itself with the problems of the village. The names of the members of the committee were written out on a board and adorned by the villagers. In a few days' time the committee started work, holding several meetings and discussing their problems.

This is the order in which the problems were brought out and how the villagers tried to solve them:

Agriculture.—The expert sent a sample of the soil to be analysed and advised the villagers what kind of plants they should grow.

The Out-patient Clinic.—There is no permanent physician in the village and the nearest hospital is far away. The transport of the sick is often very complicated and the committee decided to establish an out-patient clinic of their own.

By means of voluntary donations the first equipment was bought. The inventory of the out-patient clinic was more than modest, but on the wall hangs the board with the names of its founders, who at the same time were the members of the health committee. The physician on the team worked voluntarily in the

clinic until a permanent nurse was obtained. The hodža acted as the cashier of the clinic. With the first patients, money started coming in, which was used for drugs and further improvement of the clinic. The out-patient clinic now became a part of the district health centre, which took over responsibility for necessary personnel and other requirements.

However, the Moslem woman is still a problem. She avoids coming to the clinic and sends her sick baby for consultation accompanied by one of her elder children. There is strong hope that we shall succeed in solving this problem. The first good sign was when an advanced Moslem broke with tradition and brought his wife for consultation.

Health Problems in School and the Arrangement of the School Building.—This was a more difficult problem, since the teachers did not want to co-operate at the beginning. It was necessary to solve many of their personal problems and problems of mutual relations. It was not before a certain time passed that we succeeded in winning them over for the programme. The progress was very slow and at the beginning showed itself in very small things. For example, the members of the team erected a very primitive implement for cleaning mud from their boots. The school-children saw it and made the same thing in front of the school entrance, building two steps at the same time.

The path leading to the school was for years uncared for. The children and the members of the health committee improved it and immediately some of the villagers did the same in front of their houses.

Though the school possessed its own land, nobody took care of it. During the meeting of the health committee the villagers decided to arrange a school garden with the help of the expert on the team, who provided young fruit trees. The children planted the first saplings, and the adults helped them. The surroundings of the school soon changed its appearance. The land was irrigated and the saplings were waiting for the first warm rays of sunshine to break into bud. In this part, where the raising of orchards was generally unknown, the peasants showed great interest in young fruit trees. This interest sometimes passed the conventional borders, so that on some occasions saplings disappeared overnight to be found in the morning planted near the house of some peasant.

The agricultural expert was very satisfied with such an interest and supplied the villagers with more saplings.

During recess the children play around the school building, but they show great care not to destroy young saplings, which is understandable since they are the fruit of their toil.

A new school lavatory has been erected surrounded by saplings, so that in a few years it will be completely hidden from the view

of the passers-by. This is important because Siptar girls did not use it before because it was too much exposed.

When at last the confidence of the people was gained, the members of the team—already on friendly terms with the villagers —started the survey. They chose a hundred homes which represented the average standard and conditions of the village.

After the work described, which lasted more than six months, the survey was completed by professionals through interviews with the villagers, who showed complete confidence.

Material was sorted out on the spot, divided on very primitive shelves to be passed on later to professional statisticians who will work out the details and give a complete analysis of the way of life and problems encountered in this community.

Let us now sum up in brief all the most important problems encountered by the team in the village of Požaranje:

Economic backwardness and poverty.

Poor infant care.

Undernourishment of children.

Backward methods in handling babies, who are still being bound up in cradles.

Underdeveloped agriculture.

Bad water supply.

Insanitary lavatories and no sewage system.

Poor living conditions.

General bad health habits.

Emancipation of women.

Conclusions

And now I would like to point out some conclusions which we arrived at through our work:

1. It is essential to secure help and understanding of the authorities for such a method of work, which is the only successful way when we want to re-educate a community, to induce them to abandon the old way of life and accept a new way for which they themselves must create the necessary conditions. This is especially necessary, because such work does not give immediate results, but is a long-term programme.

2. Professional health educators are needed for planning and carrying out such teamwork in a community. Such a team should consist of all the professions which can influence and improve living conditions of a community.

3. Health education of the people in a backward community cannot be successful without raising the economic standard at the same time. However, we must not fool ourselves with the belief that a high economic standard itself is a guarantee for a healthful way of life of the people in that community. Therefore it is necessary to secure the full help of the government, which

should provide the necessary means for fundamental needs which are beyond the resources of the community concerned.

The first stage of this pilot project, with its aim of making a survey of the needs and possibilities of the people in this community, is now completed. Now follows the next stage, the goal of which will be raising of the economic standard of the village, fighting against the heavy burden of backwardness and enabling the people to build up for themselves a healthier and happier life.

The first problem in the second stage will be to ensure the support of women in the village, to liberate them from their subordinate position in the family and to include them in public life. In this way women will in reality have an equal position with men, which is ensured by our laws. Through women we hope to change the way of life in homes and in the village and ensure correct infant care, which would solve one of our greatest health problems: the very high rate of infant mortality.

NEW POSTER

"Active days need restful nights"

This new and most attractive double crown poster is now being printed. The price will be 1s. 3d. each, less discount to subscribers of 10 per cent for orders of 100 copies and over. For 500 copies a special quotation will be given.

It would be most effective to use this with the leaflet of the same name—which has already proved most popular. (Leaflet No. L45, price 2s. per dozen, less subscribers' discounts of 20 per cent per 100, 25 per cent per 1,000, 30 per cent per 5,000.)

Both publications can be obtained from The Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

All eyes on mother...

when feeding bottle time comes round. And that's when she's most thankful she follows the Milton routine. The bottle has been completely protected from dust, germs and flies — ever since the last feed. So much simpler than relying on boiling water to sterilise the bottle and teat. No fuss heating water. No risk of cracked bottles. It's not surprising that nurses and midwives recommend it, and that most hospitals today insist on

Milton

Leaflets and a film strip on 'Care of Babies' Feeding Bottles and Teats' now available from Milton Antiseptic Ltd. 42-46 Weymouth Street, London W1

BOOKS

MODERN MOTHERCRAFT—A Guide to Parents, by Helen Deem and Nora P. FitzGibbon. (*Official Handbook of the Royal New Zealand Society for the Health of Women and Children (Inc.)*. 2nd Edition, 1953. Pp. 241. Many illustrations. No price stated.)

This is an excellent book on the care of the infant and pre-school child. It is modern in outlook. (The clock-face to remind the mother of the importance of "Regularity" has the letters FLEXIBILITY to replace the numbers I to XI.) Breast feeding is recommended with understanding of the fact that some mothers will try and fail. The instructions on artificial feeding are simple and clear. Dr. G. N. Davies, senior lecturer in preventive Dentistry, Otago, contributes a chapter on Dental Care, and Miss Moira Gallagher an excellent article on "Other Important Aspects of Development in the Pre-school Years", which is full of good advice well set out.

A few years ago, some of us felt that the Truby King Mothercraft Movement had got behind the times by sticking too closely to what had been advised forty years ago. Clearly this is no longer true in New Zealand. Perhaps this book has not the vivacity of Spock's Guide, but it is as reassuring to the anxious mother, and many mothers may prefer it. It can be recommended without qualms.

RONALD MAC KEITH.

VITAMINS IN NUTRITION AND HEALTH, by Audrey Z. Baker. (Staples Press. 1954. Pp. 147. Illus. Price 12s. 6d.)

"The idea that the body's needs are definite and can be measured is a very recent one," writes Dr. Audrey Baker. New as it is, this idea lies at the root of conscious efforts to achieve health, for to fulfil all of our very complex needs creates well-being, and to frustrate any one of them causes illness and even death. We should therefore welcome as a contribution to health education any book which makes clear to its readers what vitamins, and how much of each, they need and shows them how to arrange their diets so as to provide these vitamins.

Dr. Baker sets out to make such a contribution, and she goes a long way towards achieving this difficult aim. Her style is usually clear and serviceable; although here and there occur sentences which could not easily be understood by the "nurses, health visitors and others concerned with the planning of meals" for whom the book is mainly intended. Her book maintains a generally high standard of factual accuracy; although it does not escape one or two blemishes. For example, both tables on page 113 appear to show that fresh milk contains no niacin.

Dr. Baker has selected many interesting illustrations and has sifted the material of her text thoroughly and judiciously; but the ordering of the chapters creates a sense of confusion in the reader. Both Chapters 2 and 6, neither of which is long, deal with methods of detecting and measuring vitamins and both Chapters 3 and 7 with human needs for vitamins. The lack of chapter titles at the tops of the pages adds to this sense of confusion.

H. O. J. COLLIER.

SOCIAL SCIENCE IN MEDICINE, by Leo W. Simmons and Harold G. Wolff. (New York: Russell Sage Foundation. 1954. Pp. 254. Price $3.50.)

There is a happy combination of medicine and social science reflected throughout this book, for the authors are Dr. Leo Simmons, Professor of Sociology, Yale, and Harold G. Wolff, a Professor of Medicine, Cornell. Their thesis is that developments of social sciences can help greatly in the care of patients, but their language and method of expressing this thesis is not as clear, cogent, or succinct as it could be to the English reader.

They consider the individual in his three aspects—as a living organism in his physical surroundings, as a group member in his society and as an individual in his cultural background; and they discuss the relationship between these aspects to problems of health and disease. The reader of to-day will have no difficulty in accepting the suggestions of the authors that stresses of environment, psychological as well as physical, are not infrequent in the causation of disease and its complications. The patient's past environmental stresses

often sensitise him to his present troubles, and thus an illness precipitated by the environment may occur with the reaction of the patient far greater than the immediate stress warrants.

All will agree with the authors that there is much combined research to be carried out in this field.

J. L. BURN.

HUMAN FACTORS AND EQUIPMENT DESIGN. A Symposium edited by W. F. Floyd and A. T. Welford. (H. K. Lewis, Ltd. 1954. Pp. 132. Illus. Price 21s.)

This is a record of part of the proceedings of the Ergonomics Society, and ergonomics is dangerously described thus by Professor W. E. Le Gros Clark, the anatomist:

"A man and his machine may be regarded as the functional unit of industry, and the aim of ergonomics is the perfection of this unit so as to promote accuracy and speed of operation, and at the same time to ensure minimum fatigue and thereby maximum efficiency."

Physiologists, psychologists, anatomists, engineers and biometricians are, according to Clark, converging their attention on this end of maximum efficiency. Notice that the end is maximum efficiency of man + machine in terms of output, and there is no doubt but that the application of ergonomics will increase output efficiency and, at anatomical and physiological levels, should make for better health among ergonomised workers. Indeed, ergonomics looks like replacing to some extent the rather empirical methods of industrial motion study, but its ethic is the same. Some of us like to think of person-centred machine and bench study, but not, it seems, the ergonomists.

Yet the work described in this volume is valuable, although it needs pinning firmly against the large backdrop of modern social science. The studies of Chairs and Sitting, Circulation and Work Position, and Problems of Observing Displays are worth the attention of industrial medical officers, industrial nurses, and welfare personnel generally. The adequate study of working capacity in relation to sex and age requires extension beyond the thirty years age level.

This volume indicates that the ergonomists are doing and may do very profitable work in industry. A sense of humour is a saving grace among onomists and ologists, and so is a now-and-again look at the broad horizon, a fatigue-reducing and efficiency-increasing practice for those who are confined to a narrow view—may I recommend these to ergonomists who write books?

JAMES J. GILLESPIE.

THE FOURTH INTERNATIONAL CONFERENCE ON PLANNED PARENTHOOD: Report of Proceedings. Aug. 17–22, 1953. (International Planned Parenthood Federation, 69, Eccleston Square, London, S.W.1. 1954. Pp. 199. Price 10s. 6d.)

This well-documented report will be of inestimable value to those actively engaged or interested in the various aspects of the Family Planning Association in this country or abroad, as well as to others concerned with the wider problems of world population in relation to food production.

The theme of the conference, which was attended by 160 delegates, was "Population and World Resources in Relation to the Family".

The report, containing eight chapters, divides itself broadly into three distinct parts. The first consists of admirably informative lectures on World Population and Resources, including a critical account of the work of UNO in connection with population problems, European aspects of over-population, and India's population in relation to food supply. The second part deals with Birth Control and allied themes—current experiments and research, Subfertility, Sterility, Sterilisation, Artificial Insemination, Abortion, Sex Education, and Marriage Counselling. While many of these lectures are so technical that they will be of value only to the medical profession, others deal lucidly with the social, ethical, and legal aspects of the problems and will be easily appreciated by the layman. The third part is a series of interesting reports of the various study groups at the Conference.

Finally, there is an appendix devoted to short accounts by the delegates of the current work of the Family Planning Association in their own countries, and the new Constitution and Rules of the International Planned Parenthood Federation.

ANN APPELBE.

FILMS

The following films were appraised by a joint panel of the Scientific Film Association and the University of London Institute of Education. The copyright of the material is vested in the S.F.A.; the appraisals of the six Health Education films will appear as addenda to the Catalogue of Films on Health Education *(1953) (suitable for use in the training of teachers), published by the S.F.A. and the Institute of Education.*

ACCIDENTS DON'T HAPPEN. (Gt. Britain, 1953. Sponsored by T. J. Smith & Nephew Ltd. 10 mins. 16 and 35 mm. sound. On hire from Sound Services, 269 Kingston Road, S.W.19.)

Content: This sets out to show, in a facetious story with slapstick comedy, that accidents don't happen, they are caused. Mr. Pastry (Richard Massingham) is left in charge of a family of children—a boy of about 10, a girl of about 8 and Junior, about 2—for a day. A series of accidents occur and the boy gives advice about what should have been done to prevent them; for example, folding back ends of the table cloth, turning handles of saucepans inwards, using a fireguard, keeping matches and medicine tablets away from Junior, avoiding Junior's toys which have been left lying about. During one of the many accidents, Junior's finger is cut and elastoplast is applied—the only, and quite unobtrusive, piece of advertising in the film.

Appraisal: A generously sponsored film which attempts to entertain children while teaching them. But too many preventive measures are preached, events pile on top of each other too quickly for children to be able to remember all the lessons. The priggish little boy would probably irritate other children who might reject the film as silly.

BOBBY'S BURST BALL. (Sweden, approx. 1953. Svensk Filmindustri. 11 mins. 16 mm. sound. On hire from G.-B. Film Library, Aintree Road, Perivale, Middx. Catalogue No. E.4991.)

Content: A story about road safety rules, intended for children up to the age of about 12. It has been re-edited and commentated in Britain from a film made in Sweden, where the traffic also moves on the left. Bobby, aged about 7, is seen walking out on Saturday morning to meet "the gang". He breaks traffic rules twice and gets severely scolded; after football practice with the gang he is proud to be given the ball for safe keeping; through carelessness he is nearly run over and the ball, run over by a lorry, bursts. Much chastened, Bobby watches the traffic, saves a little girl, earns 2s. 6d., helps a blind man and finally is directed to a sports shop by his friend the policeman, where he buys a new ball with the 2s. 6d. he earned.

Appraisal: A most attractive film which will not only appeal to children but will teach them; only a few rules of the road are dealt with and these are well presented and repeated in different ways. Recommended for showing to all children under the age of 12 and to training college students.

MONKEY TALE. (New Zealand, approx. 1953. New Zealand Instructional Film Unit. 9 mins. 16 mm. sound. On hire from G.-B. Film Library, Aintree Road, Perivale, Middx. Catalogue No. E.4784.)

Content: A story, using a family of chimpanzees, about safe use of bicycles, intended for young children. Charlie, the eldest "son", rides a bicycle to school, breaking all the rules. The townspeople get fed-up with Charlie and send a traffic inspector to give him a pamphlet "Safety with Cycles". Next day Charlie does all the right things—pumps tyres, checks brakes, wheels his bike on footpaths, gives signals, rides on the left. That night in his dreams a fairy chimpanzee gives him a certificate for safe cycling. The story is related by a commentator while real chimpanzees, dressed in human style clothes, act it out.

Appraisal: Well constructed, well executed, with a clear message and very positive appeal to children, this is a good teaching film. Nevertheless, the ethics and good taste of "guying" and dressing

up animals in this way are questionable, and although children will enjoy it, many adults will prefer not to show it to them.

BE CLEAN AND HEALTHY. (Australia, approx. 1952. Australian Instructional Films. 8 mins. 16 mm. sound. On hire from G.-B. Film Library, Aintree Road, Perivale, Middx. Catalogue No. F.4992.)

Content: An instructional film for Australian children on being clean, getting fresh air and eating good food. Two children, a boy and a girl, aged about 10, are shown doing all the right things like brushing teeth, washing hands, cleaning the house, keeping out flies, covering the garbage can, covering the outdoor lavatory, wearing comfortable, well-fitting clothes, having a picnic and putting papers in litter-can. The commentary, couched in didactic terms, keeps up a running fire of instruction.

Appraisal: The photography is excellent and the film is well edited with very few wasted shots, but the script is bad. There is no story, no interest for children and no opportunity for identification, Too many rules are given so that the whole effect is that of a long sermon. There are some misleading implications as well (such as that everything eaten will lead to dental decay). The film is unsuitable for English children.

FOOD FOR FREDDIE. (Canada, 1953. Crawley Films for National Film Board of Canada. 17 mins. 16 mm. sound, colour. On hire from Central Film Library, Government Building, Bromyard Avenue, W.3. Catalogue No. C.461.)

Content: A film about nutrition for parent groups or older school girls, centred around Freddie Mason, a robust youngster who is contrasted with some of his less lively friends at school. To show the relation between food and health, the teacher introduces an experiment in which white rats are fed on the same food as the children bring for their lunches. The basic requirements of a balanced diet, as outlined in Canada's Food Rules, are visualised. At home Freddie discovers that his nutrition-wise mother has already provided her family with a balanced diet.

Appraisal: This subject is unsuitable for a film, but the producer has managed his difficulties well and has made a lively film with plenty of opportunity for identification by housewives in Canada. Children would enjoy the experiments with the white rats, which are well demonstrated, but the rest of the film is appropriate only for parents from a fairly favoured economic background in North America. The colour of the print viewed was particularly crude and the sound track noisy.

SEVENTH COLUMN. (U.S.A., 1941. Metro Goldwyn Mayer. 9 mins. 16 mm. sound. On hire from M.G.M., 58 St. James' Street, S.W.1.)

Content: This sets out to show a general, war-time audience that accidents and carelessness sabotage the war effort. It touches on driving, home safety (smoking in bed, falls in the home, dimly-lit stairs) and industrial safety (protective shoes, protruding objects, ear plugs, projections on vehicles).

Appraisal: The film is out of date and too American in treatment and content to be of any use in this country.

SPORT AND HEALTH. (Hungary, 1952. Hungarian News and Documentary Film Studios. 20 mins. 16 mm. sound. On hire from Plato, 376 Gray's Inn Road, W.C.1.)

Content: A "popular science" film which sets out to show the influence of sport on health. The athletic activities best suited to overcome the bad effects of unnatural postures necessarily adopted by various sedentary workers are shown in actuality shots and in diagrams. The special values of running, swimming and games such as netball are shown; the supervision of athletes at the National Institute of Physical Culture and Sport, with some fine shots of swimming, and gymnastics by men and by women. Finally, shots of older people enjoying sports and of massed exercises with some references to the need of the State for healthy bodies and the duty of "socialist man" to his fellow workers.

Appraisal: Some of the material is interesting and the diagram sequences are valuable, while the shots of swimming and gymnastics are good and very attractive; the commentary, however, is a poor translation and badly spoken and the film is muddled in parts. Although some of the ideas are unacceptable (e.g. the massed exercises) in this country, the film would be useful as a basis for discussion with P.E. students.

GUILTY CHIMNEYS. (Gt. Britain, 1954. Associated British Pathe. 22 mins. 16 and 35 mm. sound. On free loan from: (1) Central Film Library, Government Building, Bromyard Avenue, Acton, W.3, Catalogue No. UK 2503; (2) The Gas Council.

Content: The film presents the problem of air pollution, showing how smoking fires waste fuel, and cause dirt corrosion, fog and sickness. The steps that can be taken to overcome it are indicated. The remedies are known and in some areas are already being applied, but much more needs to be done. Smokeless fuels could be more extensively used, giving in many cases greater efficiency and economy. Smoky atmosphere has too long been regarded with apathy; the time has come for apathy to give way to action.

Appraisal: An admirably presented and assembled argument. A good film which should be widely shown.

TUBERCULOSIS. (U.S.A., 1951. Encyclopaedia Britannica. 10 mins. 16 mm. sound. On hire from E.B., 102 Dean Street, W.1.)

Content: This sets out to explain the nature of the disease, its diagnosis and treatment through the story, briefly told, of Mary, a young girl who contracts T.B. from her aunt and then does not feed herself adequately after she has started her first job. This is interspersed with diagrammatic and X-ray explanation of the disease and is followed with a brief description of her treatment in a sanatorium.

Appraisal: The film deals superficially and inadequately with too many aspects of the problem and thus its real purpose remains vague. There is little positive information about control of infection and no reassurance that Mary will be restored to an active life. Injections are used for T.B. testing but no mention is made of B.C.G. It could be used with secondary school and adult groups, but preparation would be necessary before the diagrams could be understood.

THE X-RAY INSPECTOR. (Gt. Britain, 1954. Film Surveys. 10 mins. 16 and 35 mm. sound. On hire from National Assoc. for Prevention of Tuberculosis, Tavistock House, Tavistock Square, W.C.1.)

Content: This is a publicity film to encourage people to go for mass X-ray examination and to explain why it is a valuable service. Actor Robert Harris speaks straight to the audience about the lungs and heart while visuals show how they work and explain how X-ray, like an inspector, can detect deviations from the normal. The importance of early diagnosis of T.B. is emphasised. The rest of the film describes in live action photography all the stages of a campaign—the posters, the arrangements made at the factory, the arrival of an X-ray unit, and the actual photography. Finally Harris appeals again for people to come forward in order that the three people in a thousand who are likely to have T.B. may be discovered and the disease wiped out.

Appraisal: A very useful film which achieves its object, with some very telling teaching in the beginning. It shows well how easy and quick it is to get the X-ray done and that the findings are private. Very little is said about treatment and this should be dealt with in discussion after the film has been shown. A good film for school leavers, young people at work, mothers' clubs.

SUMMER SCHOOL IN HEALTH EDUCATION

THIS School is arranged annually by The Central Council for Health Education to provide training for professional health and welfare workers and for educationists in their responsibilities for Health Education of the Community. It brings together a wide variety of experience from all branches of the Health field both from the United Kingdom and from countries overseas, and has become a unique and international occasion for consideration of advances in the principles and practice of health teaching.

The 1955 Summer School will be held at Neuadd Reichel, Bangor, North Wales, from August 15 to 26. The inclusive fee for residence and tuition will be 16½ guineas.

Further particulars can be obtained from The Medical Director, The Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

Printed in Great Britain by Fisher, Knight & Co., Ltd., St. Albans.